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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,766	10/26/2001	Mark F. Krol	SP01-038	2882

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EXAMINER

LEE, JOHN D

ART UNIT PAPER NUMBER

2874

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,766

Applicant(s)

KROL ET AL.

Examiner

John D. Lee

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-21, 23-28, 33-42 and 49-58 is/are allowed.
- 6) ☒ Claim(s) 22, 29-32, 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 45-48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Applicant's communication filed on October 24, 2003, has been carefully studied by the Examiner. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and the rejections set forth in the previous Office action are withdrawn. The previously applied restriction requirements have also been reconsidered and withdrawn. All of claims 1-58 are now examined. In view of further search, however, and the consequent discovery of a previously uncited prior art document, a new rejection is applied to certain of the pending claims. Further, in view of a detailed scrutiny of the claims, numerous 35 U.S.C. § 112 claim problems have been discovered. A new 35 U.S.C. § 112 rejection is accordingly set forth below. This action is **not** made final.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22, 29-32, and 44 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In independent claim 22, line 5, there is no antecedent basis for the term "the mirror", thus rendering the claim indefinite. The correct term would be "the reflective element" (see claim 22, line 3). In the last two lines of claim 29, the phrase "having the *at least one* optical module" is too broad and not in agreement with the previous claim recitations. The correct phrase would be "having the *at least one pair* of optical modules". As presently worded the claim is indefinite. The indicated dependencies of claims 30, 31, and 32 are incorrect since there is no antecedent

support for “the ring portion” (claim 30, line 1), “the first annulus” (claim 31, lines 1-2), “the second annulus” (claim 31, line 2), “the lateral portion” (claim 31, line 3), and “the reflector” (claim 32, line 1). It is believed that claim 30 *should* depend from claim 29, that claim 31 *should* depend from claim 29, and that claim 32 *should* depend from claim 29. In line 1 of claim 44, the term “each collimator panel” is too broad and not in agreement with the previous claim recitation of only a *single* collimator panel. The claim is thus indefinite.

ADD
Claims ⁴⁴~~44~~-48 are objected to for the following minor deficiencies: in line 1 of each of these claims, the word “fabric” should actually be “module”; in claim 44, line 2, the word “a” should be “the”; and in claim 47, line 1, the words “at least one” should be deleted.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 43 and 44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,262,815 to Segawa (newly cited). In describing the existing and known prior art, Segawa states that an image scanner is known which includes a collimator lens and a reflecting mirror secured to a frame (column 2, lines 20-26). This is essentially all that is claimed in applicant’s claim 43 (a frame, a collimator secured to the

frame, and a beam steering panel (mirror) secured to the frame). Segawa doesn't specifically state that the collimator and mirror are in optical alignment relative to one another, but this is implied because the device is used in an optical scanner. The person of ordinary skill in the art, therefore, at the time of applicant's invention, would have understood that Segawa obviously discloses the same invention as that set forth in applicant's claim 43. The introductory claim language "for use in an optical switch fabric" is of no consequence since no switch or switch fabric is actually being claimed and since it is merely a statement of intended use. As for claim 44, one of ordinary skill in the art would find it clearly obvious that, in an *image* scanning environment, the "mirror" discussed by Segawa is "at least one pixel".

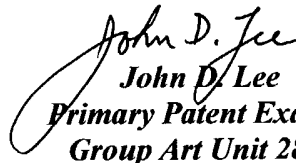
Claims 45-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art device disclosed by Segawa does not suggest the use of MEMS mirror elements, mirror elements having at least two degrees of beam steering freedom, or a plurality of individually steerable mirror elements.

Claims 1-21, 23-28, 33-42, and 49-58 are allowable over the prior art of record. The prior art does not disclose or reasonably suggest a modular optical switch fabric of the type claimed wherein at least one optical module is removably coupled to an optical chassis, the module comprising a collimator panel and a beam steering panel secured to a frame member, with the frame member being configured so as to position the collimator

panel and beam steering panel in fixed optical alignment relative to one another. The prior art also does not disclose or reasonably suggest a method of directing light signals through such an optical switch fabric or a method of maintaining such an optical switch fabric when module maintenance is required.

Applicant's arguments with respect to claims 43 and 44 have been considered but are moot in view of the new ground(s) of rejection. With respect to the previously applied prior art, the Examiner fully concurs with applicant's arguments set forth in the amendment of October 24, 2003.

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (703) 308-4886. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (703) 308-0956, to the technical support staff supervisor (Team 2) at telephone number (703) 308-3072, or to the Technology Center 2800 Customer Service Office at telephone number (703) 306-3329.


John D. Lee
Primary Patent Examiner
Group Art Unit 2874